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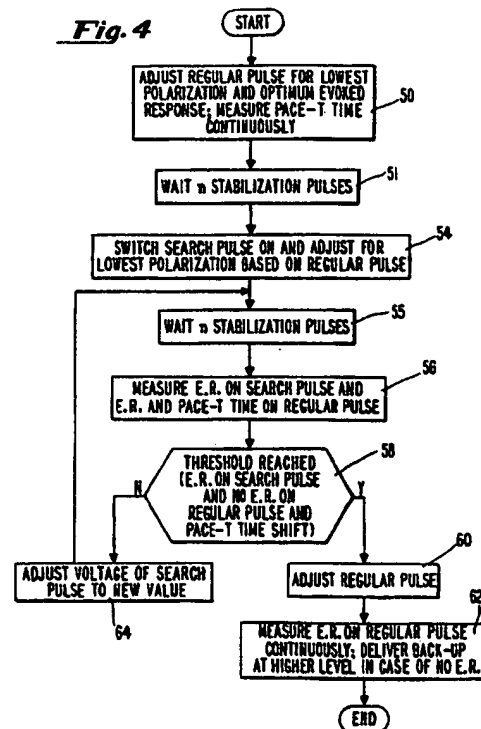
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(54) Pacemaker system with improved evoked response and repolarization signal detection

(57) There is provided a pacemaker system with capture verification and threshold testing, in which the pacemaker adjusts the post-stim pulse portion of a triphasic pulse to minimize polarization, and waits after each change in delivered pace pulses for a stabilization interval, in order to enhance capture verification. The threshold test utilizes a pace pulse pair, comprising a prior search pulse (54) which is varied during the test, and the regular pacing pulse (50) which is above threshold. When delivery of the pulse pairs is initiated, the search pulse is adjusted to optimize polarization (54), and the pacemaker waits for a predetermined stabilization period of time (55) in order to allow for minimum polarization and to optimize capture detection. The search pulse is increased incrementally in output value toward threshold (64), and following each such increase the pacemaker waits for a stabilization interval (55). The pacemaker detects when capture is achieved by the search pulse (58), thereby providing an indication of threshold. The polarization minimization feature involves changing the post-stim and/or pre-stim pulse system; preferably the pre-stim portion is fixed and the post-stim duration is scanned (77) to find the optimal duration. The polarization minimization also enables detection of repolarization signals, and consequent pacemaker functions such as AAIR pacing and suppression of atrial tachycardia.





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# EUROPEAN SEARCH REPORT

Application Number  
EP 98 10 4151

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 September 1999	Examiner Ferrigno, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

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